

## RANDOMIZED COMPARISON OF 3 TYPES OF MICRONUTRIENT SUPPLEMENTS FOR HOME FORTIFICATION OF COMPLEMENTARY FOODS IN GHANA: EFFECTS ON GROWTH AND MOTOR DEVELOPMENT

Adu-Afarwuah, S., Lartey, A., Brown, K.H., Zlotkin, S., Briend, A. and Dewey, K.G.  
*Randomized comparison of 3 types of micronutrient supplements for home fortification of complementary foods in Ghana: effects on growth and motor development.*  
American Journal of Clinical Nutrition. 2007; 86: 412–20.

### ABSTRACT

**BACKGROUND:** The low micronutrient content of complementary foods is associated with growth faltering in many populations. A potential low-cost solution is the home fortification of complementary foods with Sprinkles (SP) powder, crushable Nutritabs (NT) tablets, or energy-dense (108 kcal/d), fat-based Nutributter (NB).

**OBJECTIVE:** The objective was to test the hypothesis that multiple micronutrients added to home-prepared complementary foods would increase growth and that the effect would be greatest in the presence of added energy from fat.

**DESIGN:** We randomly assigned 313 Ghanaian infants to receive SP, NT, or NB containing 6, 16, and 19 vitamins and minerals, respectively, daily from 6 to 12 mo of age. We assessed anthropometric status at 6, 9, and 12 mo; micronutrient status at 6 and 12 mo; motor development at 12 mo; and morbidity weekly. Infants (n = 96) not randomly selected for the intervention (nonintervention; NI) were assessed at 12 mo.

**RESULTS:** The groups did not differ significantly at baseline, except that the NB group had a higher proportion of boys and weighed slightly more. The dropout rate (15/313) was low. At 12 mo, after control for initial size, the NB group had a significantly greater weight-for-age z score (WAZ) (-0.49 - 0.54) and length-for-age z score (LAZ) (-0.20 - 0.54) than did the NT group (WAZ: -0.67 - 0.54; LAZ: -0.39 - 0.54) and the NT and SP groups combined (WAZ: -0.65 - 0.54; LAZ: -0.38 - 0.54); the difference with the NI group (WAZ: -0.74 - 1.1; LAZ: -0.40 - 1.0) was not significant. A lower percentage of the NI infants (25%) than of the intervention groups (SP: 39%; NT: 36%; NB: 49%) could walk independently by 12 months.

**CONCLUSIONS:** All three supplements had positive effects on motor milestone acquisition by 12 months compared with no intervention, but only NB affected growth.